

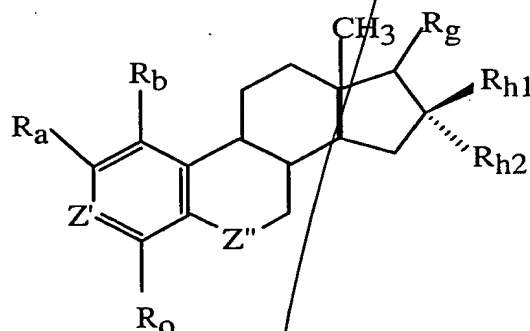
# CLAIMS

We claim:

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A compound of the general formula:



wherein:

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a)  $R_b$  and  $R_o$  are independently -H, -Cl, -Br, -I, -F, -CN, lower alkyl, -OH, -CH<sub>2</sub>-OH, -NH<sub>2</sub>; or N(R<sub>6</sub>)(R<sub>7</sub>), wherein R<sub>6</sub> and R<sub>7</sub> are independently hydrogen or an alkyl or branched alkyl with up to 6 carbons;

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b)  $R_a$  is -N<sub>3</sub>, -C≡N, -C≡C-R, -C=CH-R, -R-C=CH<sub>2</sub>, -C≡CH, -O-R, -R-R<sub>1</sub>, or -O-R-R<sub>1</sub> where R is a straight or branched alkyl with up to 10 carbons or aralkyl, and R<sub>1</sub> is -OH, -NH<sub>2</sub>, -Cl, -Br, -I, -F or CF<sub>3</sub>;

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c) Z' is >CH, >COH, or >C-R<sub>2</sub>-OH, where R<sub>2</sub> is an alkyl or branched alkyl with up to 10 carbons or aralkyl;

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d) >C-R<sub>g</sub> is >CH<sub>2</sub>, >C(H)-OH, >C=O, >C=N-OH, >C(R<sub>3</sub>)OH, >C=N-OR<sub>3</sub>, >C(H)-NH<sub>2</sub>, >C(H)-NHR<sub>3</sub>, >C(H)-NR<sub>3</sub>R<sub>4</sub>, or >C(H)-C(O)-R<sub>3</sub>, where each R<sub>3</sub> and R<sub>4</sub> is independently an alkyl or branched alkyl with up to 10 carbons or aralkyl;

e) R<sub>h1</sub> and R<sub>h2</sub> are independently H, or a straight or branched chain alkyl, alkenyl or alkynyl with up to 6 carbons that is

unsubstituted, or substituted with one or more groups selected from a hetero functionality (O-Y, N-Y or S-Y) where Y is H, Me or an alkyl chain up to 6 carbons; a halo functionality (F, Cl, Br or I); an aromatic group optionally substituted with hetero, halo or alkyl; or  $R_{h1}$  and  $R_{h2}$  are independently an aromatic group optionally substituted with hetero, halo or alkyl, provided that both  $R_{h1}$  and  $R_{h2}$  are not H;

f)  $Z''$  is  $>CH_2$ ,  $>C=O$ ,  $>C(H)-OH$ ,  $>C=N-OH$ ,  $>C=N-OR_5$ ,  $>C(H)-C \equiv N$ , or  $>C(H)-NR_5R_5$ , wherein each  $R_5$  is independently hydrogen, an alkyl or branched alkyl with up to 10 carbons or aralkyl;

and wherein all monosubstituted substituents have either an  $\alpha$  or  $\beta$  configuration.

2. The compound of Claim 1, wherein :  
 $R_b$  and  $R_o$  are H,  
 $R_a$  is  $OCH_3$   
 $Z'$  is  $>C-OH$ ,  
 $>C-R_g$  is  $>C(H)-\beta-OH$ , and  
 $Z''$  is  $>CH_2$ .
3. The compound of Claim 2, wherein :  
 $R_{h1}$  and  $R_{h2}$  are independently H and Et.
4. The compound of Claim 2, wherein:  
 $R_{h1}$  and  $R_{h2}$  are independently H and n-Pr.
5. The compound of Claim 2, wherein:  
 $R_{h1}$  and  $R_{h2}$  are independently H and i-Bu.
6. The compound of Claim 2, wherein:

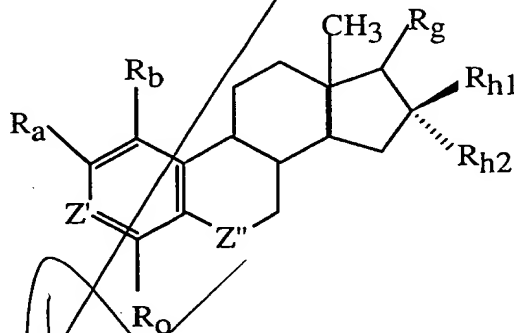
$R_{h1}$  and  $R_{h2}$  are independently H and  $CH_2OH$ .

7. The compound of Claim 2, wherein :  
 $R_{h1}$  and  $R_{h2}$  are independently H and n-Bu.

8. The compound of Claim 2, wherein :  
 $R_{h1}$  and  $R_{h2}$  are independently H and Me.

9. The compound of Claim 2, wherein :  
 $R_{h1}$  and  $R_{h2}$  are independently H and  $(CH_2)_n-C(Me)_2$ .

10. A method of inhibiting angiogenesis comprising administering to an endothelial cell an angiogenesis inhibiting amount of a compound of the general formula:



wherein:

a)  $R_b$  and  $R_o$  are independently -H, -Cl, -Br, -I, -F, -CN, lower alkyl, -OH,  $-CH_2OH$ ,  $-NH_2$ ; or  $N(R_6)(R_7)$ , wherein  $R_6$  and  $R_7$  are independently hydrogen or an alkyl or branched alkyl with up to 6 carbons;

b)  $R_a$  is  $-N_3$ ,  $-C \equiv N$ ,  $-C \equiv C-R$ ,  $-C=CH-R$ ,  $-R-C=CH_2$ ,  $-C \equiv CH$ ,  $-O-R$ ,  $-R-R_1$ , or  $-O-R-R_1$  where  $R$  is a straight or branched alkyl with up to 10 carbons or aralkyl, and  $R_1$  is -OH,  $-NH_2$ , -Cl, -Br, -I, -F or  $CF_3$ ;

c) Z' is  $>\text{CH}$ ,  $>\text{COH}$ , or  $>\text{C-R}_2\text{-OH}$ , where  $\text{R}_2$  is an alkyl or branched alkyl with up to 10 carbons or aralkyl;

5 d)  $>\text{C-R}_g$  is  $>\text{CH}_2$ ,  $>\text{C(H)-OH}$ ,  $>\text{C=O}$ ,  $>\text{C=N-OH}$ ,  $>\text{C(R}_3\text{)OH}$ ,  $>\text{C=N-OR}_3$ ,  $>\text{C(H)-NH}_2$ ,  $>\text{C(H)-NHR}_3$ ,  $>\text{C(H)-NR}_3\text{R}_4$ , or  $>\text{C(H)-C(O)-R}_3$ , where each  $\text{R}_3$  and  $\text{R}_4$  is independently an alkyl or branched alkyl with up to 10 carbons or aralkyl;

10 e)  $\text{R}_{h1}$  and  $\text{R}_{h2}$  are independently H, or a straight or branched chain alkyl, alkenyl or alkynyl with up to 6 carbons that is unsubstituted, or substituted with one or more groups selected from a hetero functionality (O-Y, N-Y or S-Y) where Y is H, Me or an alkyl chain up to 6 carbons; a halo functionality (F, Cl, Br or I); an aromatic group optionally substituted with hetero, halo or alkyl; or  $\text{R}_{h1}$  and  $\text{R}_{h2}$  are independently an aromatic group optionally substituted with hetero, halo or alkyl, provided that both  $\text{R}_{h1}$  and  $\text{R}_{h2}$  are not H;

15 20 f) Z'' is  $>\text{CH}_2$ ,  $>\text{C=O}$ ,  $>\text{C(H)-OH}$ ,  $>\text{C=N-OH}$ ,  $>\text{C=N-OR}_5$ ,  $>\text{C(H)-C}\equiv\text{N}$ , or  $>\text{C(H)-NR}_5\text{R}_5$ , wherein each  $\text{R}_5$  is independently hydrogen, an alkyl or branched alkyl with up to 10 carbons or aralkyl;

25 and wherein all monosubstituted substituents have either an  $\alpha$  or  $\beta$  configuration.

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